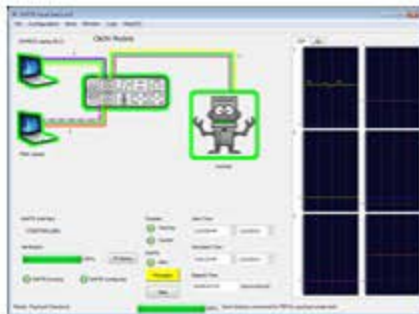


Remote Advanced Payload Test Rig

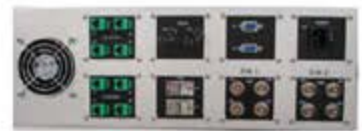
RAPTR



RAPTR User Display



RAPTR System



C&DH Embedded System (Back)

RAPTR is a Command & Data Handling (C&DH) verification tool available for International Space Station payload developer use. The RAPTR system can be configured to simulate C&DH interfaces for three classes of payloads:

- Expedite the Processing of Experiments to the Space Station (EXPRESS) Subrack payloads
- EXPRESS Logistics Carrier (ELC) Subpallet payloads
- Facility Class payloads

The RAPTR system offers a software checkout of a single payload's C&DH interfaces to-and-from the simulated ISS interfaces. Additionally, Analog and Discrete (A&D) payload interfaces are supported for the following payload types: (1) EXPRESS; (2) ELC; (3) Columbus (COL) Back Porch; and (4) Japanese Experiment Module (JEM) Exposure Facility (EF).

The RAPTR system is comprised of three major components:

- RAPTR Visual Status (RVS) software application (resident on User-supplied computer) provides the User interface for configuring and operating the RAPTR system. Some of the features include creating, saving, loading 1) test configurations 2) 1553 commands to the following destinations: (a) Payload Executive Processor (PEP) simulation; (b) EXPRESS Software simulation; (c) ELC simulation; and (d) Payload 1553 remote terminal (in conjunction with a TRK laptop or in place of a TRK laptop) 3) real-time test status 4) real-time data plots and 5) post-test data analysis viewer
- RAPTR Command & Data Handling (C&DH) module – provides the MIL-STD- 1553, Ethernet, and High Rate Data Link (HRDL) interfaces for the USOS, EXPRESS Rack, and ELC systems.
- RAPTR Analog & Discrete (A&D) module (if needed) – provides the Analog and Discrete interfaces for the EXPRESS Rack, ELC, JEM EF, and COL Back Porch.

RAPTR provides a C&DH verification function/capability to Payload sites:

- Operating in Local Mode (at PD site), RAPTR can provide verification of virtually all payload C&DH requirements.
- (Late 2016 – Early 2017) RAPTR supports End-to-End (ETE) data flow capability from Payload site to HOSC (also requires HOSC router).

RAPTR Documentation

D683-36386-1 Revision B

(available in EDMS)

Requesting a RAPTR

RAPTRs may be made available to Payload Developers to accommodate new payload C&DH verification. Formal request is made in the Payload Integration Agreement, and approved by the Payload Integration Panel.

